

Enviro News

A newsletter for environmental programs in Harford County

Welcome

Rivers, streams and creeks have powered mills since colonial times. This issue, concludes our article on the history of Eden Mill and efforts to produce electricity at the mill once again. Continue reading about Harford County's Water Resources partnership with Hickory and Forest Hill Elementary Schools. Also Part 2 of the Harford Bird Club's article on enjoying birds in your own backyard.

Enviro News is distributed three times per year (January, May, and September) and is available in all Harford County Library branches, in display racks at various locations throughout the County, and on-line at www.harfordcountymd.gov/environews.

Maryland Birds and Habitats Summer Program June 20-25, 2010



The Maryland Ornithological Society and The Washington College Center for Environment and Society will sponsor a one week summer program for educators and students on Maryland Birds and their habitats. Birds are great environmental indicators of habitat quality. This program will consist

of field and classroom experiences. Educators can be either professional or volunteers that work with youth. Students should be in grades 8 through 12 in the 2010-2011 school year. The program will take place at Washington College in Chestertown, Maryland. There is a cost for the program, but scholarships are available. Application will be accepted until program is full. To learn more about this summer program contact George Radcliffe at radclifg@gmail.com.

Eden Mill (Part 2 of 2)

by Deborah V. Lewis
Harford County Water Resources

Guest Contributors

Frank Marsden, Dave Robinson and Jack L. Shagena, P.E.
(Ret.), Eden Mill, An Illustrated History

When James Smith died in 1964, Eden Mill and several acres of surrounding land were purchased by Harford County Department of Parks and Recreation. Many ideas were presented for developing Eden Mill but lack of funding delayed development. Caretaker efforts of many private citizens helped Eden Mill survive during these early years. The tireless efforts of the Eden Mill Nature Committee Inc. (Frank Marsden, Peggy Eppig, Sylvia Hunt, Dick and Elaine Hunt, Jerry Logan, Sharon and John Miller, Andrea Musser and others) created what is now the Eden Mill Park Nature Center & Historic Mill Museum.

Eden Mill has been a preserver of the great outdoors for Harford County. This historic mill continues to serve as a nature center, museum and outdoor recreation facility for today's generations and those yet to come. Eden Mill is experiencing another rebirth. According to volunteer Dave Robinson, once again it is being refurbished to function as a water (hydroelectric) mill. There are several goals for this project: produce enough electricity to operate the mill, receive credit from Baltimore Gas and Electric Company for any excess electricity, operate as an

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David R. Craig
Harford County Executive

"Preserving Harford's past, promoting Harford's future"



Schedule of Events

Bird Banding. Various Dates, 7am-12pm. Eden Mill Nature Center, 1617 Eden Mill Rd, Pylesville. Bird banding is important for studying birds movement, survival and behavior. Free. 410-836-3050. www.edenmill.org

Wade-In. June 5, 2-5pm. Anita C. Leight Estuary Center, 700 Otter Point Creek Rd, Abingdon. Family oriented environmental activities. Wade into Bush River to determine the depth of water clarity. Free. 410-612-1688. www.otterpointcreek.org

Summer Fun Day at Steppingstone Museum. July 11, Noon-4:00pm. Steppingstone Museum, 461 Quaker Bottom Road, Havre de Grace. Summer family fun with lawnmower races, games, crafts, food and more. Admission. 410-939-2299. www.steppingstonemuseum.org

23rd Annual Duck Fair. Sept. 11, 9-4pm. Wildlife artists & carvers, auction, retriever dog demo, food & fun. Havre de Grace Decoy Museum, 215 Giles St, Havre de Grace. Free. 410-939-3739. www.decoymuseum.com



For More Info

Harford County Water Resources 410-638-3545
www.harfordcountymd.gov/waterresources

Harford County Bird Club 410-939-3537
www.harfordbirdclub.org

Growing Home Campaign 410-638-3545
www.growinghome.info



Recommended Readings

Secret Lives of Common Birds

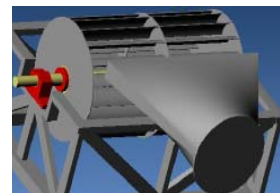
by Marie Read

Just like humans, birds have unique and different behaviors. Take for instance the need to drink water. While some birds sip, others slurp water. Many birds living in desert regions produce some of their own water through a process known as metabolic water. If these little tidbits have tickled your feathers, then this book on bird behaviors with its beautiful pictures is a must read.

eco-friendly generation facility, decrease the carbon foot print by not using carbon sources for power and provide an educational tool for visitors. Northland Engineering of International Falls, LLC performed the hydroelectric study for the mill. Constraints of the project are: preserving the historic environment, existing conditions of mill and related structures, construction and operation cost, regulatory requirements and design requirements such as head and flow rate. The flow rate must also consider seasonal low flows that typically occur from July to September. During seasonal flows the water level in Deer Creek is lower. During this time water flow is critical for Eden Mill and locations downstream.

The dam erected by Elijah Stansbury was constructed of concrete; the height is eighteen feet. A renovation was done in 1976 of the dam and related structures. Water flows by gravity from Deer Creek into the dam. The dam is constructed with a center gate for maintenance and emergency situations. The hydro turbines are housed in (2) vaults on the north side of the dam each with a wooden head gate. The vaults operate independently. The existing design includes a trash rack the length of both vaults. Above the turbines you will find the generators. Typically only one generator operated at a time. The other was kept on standby. On the north bank of Deer Creek is the tail race. This is the final discharge point for water flowing through the dam.

The engineering firm presented several options to stakeholders. The final proposed design is to remove one of the existing turbines and replace it with a crossflow turbine. The old turbine will be displayed in the museum as a teaching tool. The crossflow turbine meets design, construction, operation, maintenance and cost requirements. One disadvantage of this turbine is that it will not utilize all available head space. Head space is the vertical distance in which the water drops. The larger this number the more electricity produced. Eden Mill will produce less electricity. This trade off was not a major priority for the stakeholders.



Crossflow Turbine

Several issues now impact the success of this project with funding again being the major. But if we have learned anything about the resilience of Eden Mill volunteers, it is always full steam ahead. For more information visit their website www.edenmill.org.

Schools

Addressing Water Quality on School Campuses
by Christine Buckley
Harford County Water Resources

Plans for the rain gardens at Forest Hill and Hickory Elementary Schools are moving forward but at a slower pace than expected. Unfortunately, the big snows arrived just when the topographic surveys or elevation measurements were scheduled. Most of the areas to be surveyed were in locations where the snow was placed. So, we had to wait for the snow to melt.

Those surveys have been completed and soil testing is scheduled to be done soon. All of this information is gathered, so the design engineer knows what the existing lay of the land is and types of soil present where the rain gardens will be constructed. While the design engineer has been busy drafting construction drawings, a small group of students at each school have been busy conducting research. Their research has included walking the school grounds to understand which directions water flows after a rain and what pollutants exist that could be carried away with the water. Some of those pollutants could include excess fertilizers, sediment, antifreeze, oils and greases, and trash.

The students have spent many hours on the internet developing an understanding of how rain gardens remove pollutants from the water before they reach the local streams. Rain gardens gather the runoff after a rain and it percolates slowly into mulch and a specially mixed soil. The plants selected for a rain garden can tolerate short periods of time in standing water. This helps absorb pollutants. The students have been researching appropriate plants to select and will create a landscaping plan for their rain gardens.

They have been encouraged to expand their research to include ways to reduce pollutants first at their source. For example, encouraging people to keep their cars properly maintained can reduce the amount of pollutants like antifreeze and oils and greases that need to be removed in the rain garden.

The next phase of the project for the students is to get the word out about the rain garden project and educate the rest of the student body and their parents about water quality. This outreach will include letters to the parents, short facts in the school newsletter and posters and pictures. Because snow delayed the project, construction will take place during the beginning of the next school year. The winter issue of Enviro News will feature articles from each school written by the students.

Guest Author



Spring Birding in Harford County
by Dave Webb
President, Harford Bird Club

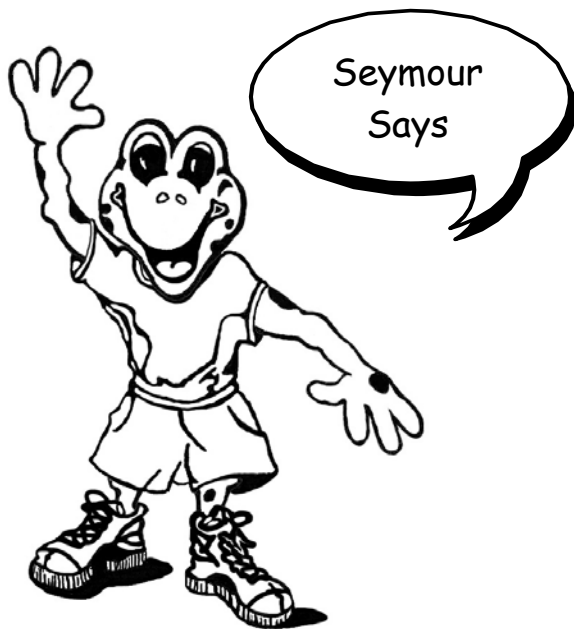
At no other time of the year is the hobby of bird watching more exciting than spring when birds sport their most colorful plumages, fill the air with exuberant songs, and perform fascinating and sometimes bizarre courtship rituals. Over 110 species of birds regularly breed in Harford County. Another 120 migrate through en route to more northerly breeding grounds. Here's a brief guide to some of the best places to witness this spring spectacle and the birds that you might encounter.

Two of our largest predatory species, Great Horned Owl and Bald Eagle, start breeding in December. By early February, many are incubating eggs. Eagle nests (or "aeries") can weigh more than a ton and are about six feet wide. They are easy to spot until mid-April when trees fill out. Aeries are always found near water, so look for them along the Susquehanna River, Deer Creek, and Broad Creek. Great Horned Owls can be found anywhere in the county with sufficient open space for hunting. They use the abandoned nests of other large birds. Look for their "horns" or feather tufts barely sticking up from the nest.

On warm, calm March evenings, male American Woodcocks woo their female counterparts with a bizarre ritualistic "sky dance". These pot bellied members of the shorebird family inhabit wet, upland meadows. As sunset approaches, their attention turns to courtship. The males start the sky dance with a spiraling skyward flight. As they do this, their wing beats make a rapid, twittering sound. Once they reach 200 feet, they sing a few chirps, and then rapidly return to the ground in a tight spiral. To complete the dance, they give a loud, nasal "peent" call. You can witness sky dances on special field trips offered by the Harford Bird Club.

Swan Harbor Farm has earned a reputation as one of the best birding hotspots in Harford County. The impoundment built by Ducks Unlimited, and the surrounding agricultural fields are not to be missed in April. Long-legged waders such as Great Egret and Glossy Ibis may join smaller shorebirds such as Wilson's Snipe, Greater Yellowlegs and Least Sandpiper to feed in the shallows and mudflats. Other unheralded species waiting to be discovered at Swan Harbor Farm are bitterns, rails, and Pied-billed Grebe. The American Bittern hides in cattails with its streaked neck extended upward to maximize

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Choose nursery native plants and trees

when landscaping. Native plants and trees require less water, fertilizer and pesticides, and thrive with minimal care since they are already adapted to the environment where you live.

Reuse empty glass containers. Use them to store drinking water and other beverages. They make great food storage containers.

Participate in spring clean-up events.

Whether it is household hazardous waste, e-cycling, stream, neighborhood or the garage, spring clean-up events help protect and improve our environment.

Lawn care. Have soil tested at local cooperative extension office to know what amendments you need. Use natural fertilizers made from waste products such as chicken feathers, manure etc. sparingly. Mow with a mulching mower and keep blade sharp. Mow at proper height. Compacted or thin lawns may require aeration in the fall.

Enviro News

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***Next Issue Available
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Spring Birding in Harford County (continued from page 3)

camouflage. Virginia Rail, King Rail and Sora are very secretive denizens of the impoundment. In recent years, pair of Pied-billed Grebes has successfully raised young at the impoundment. This makes Swan Harbor Farm one of only a handful of locations in Maryland where this declining species of water bird breeds.

For many local birders, the highlights of the spring season are the waves of vireos, swallows, flycatchers, thrushes, orioles, cuckoos and warblers that can be found in Harford County. Many of these birds have spent their winter in tropical regions between the Caribbean and South America. These "neotropical migrants" are insectivorous and most are found in trees. Some of the better public areas for viewing spring songbirds include Harford Glen, Rocks, Susquehanna and Gunpowder Falls State Parks. Susquehanna State Park has brilliant gold Prothonotary Warblers. These cavity nesters are found along Stafford Road near slow moving water or stagnant pools. Yellow-throated Warblers boldly marked in black and white with golden throat, forage in the canopies of sycamores along the banks of Deer Creek. The most celebrated of the park's songbirds is the Cerulean Warbler. This small, sky blue warbler has seen its North American population plummet by 80% over the last 40 years. However, they remain fairly common along the Susquehanna Ridge Trail (blazed in red). Their high pitched buzzy song is often the best clue to their presence.

Even in your own backyard you can attract colorful spring migrants by offering them food. Brilliant Indigo Buntings and Rose-breasted Grosbeaks readily take offerings of sunflower seeds. Halved oranges are a tasty treat for Baltimore Orioles. A 4:1 mixture of water and sugar in a specially designed feeder will attract our smallest feathered friend, the Ruby-throated Hummingbird.



Male Rose-breasted Grosbeaks: photo Lynn Feryus

Watching birds is your ticket to a world of beauty, diversity and wonder. So grab your binoculars, field guide, and see what birds you can find in the great outdoors of Harford County!

For information on birding field trips in Harford County at any time of the year, visit www.harfordbirdclub.org/harfield.html.